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(54) Tunable wavelength-selective filter and its manufacturing method

(57) Fabry-Perot etalon type tunable wavelength-selective filter comprises: a first layer 102 including a transparent electrode 105 and an optical mirror layer 104; a third layer 103 including a transparent electrode 105 and an optical mirror layer 104; and a second layer 101 which is composed of a material with a refractive index variable with electric field, and sandwiched between the first layer 102 and the third layer 103, wherein the material having a refractive index variable with electric field is composed by dispersing liquid crystal droplets equal to or less than 150 nm in diameter in a light transmissive characteristic medium such as a polymer or silica glass, and by adding plasticizer therein. In this structure, the optical mirror layer consists of a dielectric multilayer mirror with an optical reflectance of equal to or more than 95% for 1.5 μm wavelength light, and the glass substrate has a finishing surface precision of equal to or less than $\lambda/10$, where λ is a wavelength of light that traverses the tunable wavelength-selective filter.

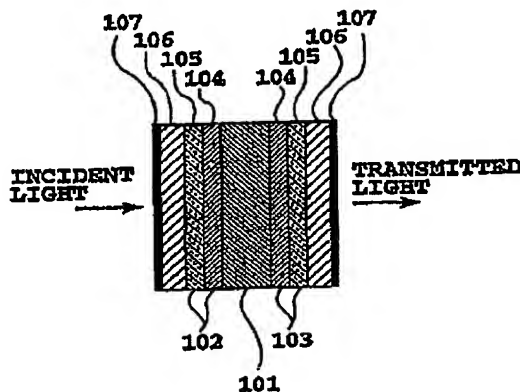


FIG.1

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